Technical Data Sheet

LOCTITE ABLESTIK QMI9507-2C2

November 2012

PRODUCT DESCRIPTION

LOCTITE ABLESTIK QMI9507-2C2 provides the following product characteristics:

Technology	Proprietary Hybrid Chemistry
Cure	Heat cure or Snap Cure
Product Benefits	• High thermal conductivity • Excellent electrical conductivity • Hydrophobic • Stable at high temperatures • Void-free bondline • Controlled bondline thickness • High adhesive strength • High resistance to delamination • Good resistance to "popcorning" after exposure to lead-free solder reflow temperature
Spacer Size	50 µm
Application	Die attach
Filler Type	Silver
Typical Assembly Applications	Attachment of integrated circuits and components to metallic leadframes
Substrates	Wide variety of metals, Ceramic surfaces, Copper, Ni/Pd/Au, Alloy 42 leadframes and Silver-plated copper leadframes

LOCTITE ABLESTIK QMI9507-2C2 is developed as a soft solder alternate for applications requiring high thermal or high electrical conductivity. It contains spacers for improved bondline control. The optimized loading percentage is such that other bulk properties of the material remain unaffected .

This product and its use may be covered by patent 5,716,034 and by one or more pending patent applications.

TYPICAL PROPERTIES OF UNCURED MATERIAL

Thixotropic Index (0.5/5 rpm)	4.8
Viscosity, 5 rpm @ 25°C, mPa·s (cP)	18,500
Specific Gravity @ 25ºC	4.1
Pot Life @ 25ºC, hours	24
Shelf Life @ -40°C (from date of manufacture), days	365

TYPICAL CURING PERFORMANCE

Oven Cure

30 minutes @ 185°C

Snap Cure Condition

7-Zone Oven:

Temp per zone: 170ºC, 170ºC, 170ºC, 190ºC, 190ºC, 190ºC, 190ºC

Time per zone, seconds 10

LOCTITE ABLESTIK QMI9507-2C2 is designed to achieve UPHs several orders of magnitude higher than conventional oven cured adhesives. Maximum productivity is realized through in-line cure, either on the diebonder using a post diebond heater or on the wirebonder preheater.

The above cure profiles are guideline recommendations. Cure conditions (time and temperature) may vary based on customers' experience and their application requirements, as well as customer curing equipment, oven loading and actual oven temperatures.

TYPICAL PROPERTIES OF CURED MATERIAL

Physical Properties

Coefficient of Thermal Expansion, TMA:		
Below Tg, ppm/°C		53
Above Tg, ppm/°C		156
Glass Transition Temperature(Tg), °C		3.3
Thermal Conductivity , W/(m-K)		6 to 7
DMA Modulus :		
@ 25°C	N/mm² (psi)	3,370 (489,000)
Extractable Ionic Content, :		
Chloride (Cl-)		<20
Sodium (Na+)		<20
Potassium (K+)		<20
Fluoride (F-)		<20

Electrical Properties

Volume Resistivity, ohms-cm	0.00004

TYPICAL PERFORMANCE OF CURED MATERIAL

Die Shear Strength:	
300 x 300 mm die on Ag/Cu LF , kg-f:	
@ 25ºC	57
@ 245ºC	21

GENERAL INFORMATION

For safe handling information on this product, consult the Safety Data Sheet, (SDS).

THAWING:

1. Allow container to reach room temperature before use.
2. After removing from the freezer, set the syringes to stand vertically while thawing.
3. DO NOT open the container before contents reach 25°C temperature. Any moisture that collects on the thawed container should be removed prior to opening the container.
4. DO NOT re-freeze. Once thawed to -40°C, the adhesive should not be re-frozen.

DIRECTIONS FOR USE

1. Thawed material should immediately be placed on dispense equipment for use.
2. If the adhesive is transferred to a final dispensing reservoir, care must be exercised to avoid entrapment of contaminants and/or air into the adhesive.
3. Adhesive must be completely used within the product's recommended work life.
4. Sufficient bondforce should be applied to control the bondline thickness. Optimization of diebonding parameters is strongly recommended to consistently meet target bondline thickness.
5. Alternate dispense amounts may be used depending on the application requirements.
6. Star or crossed shaped dispense patterns will yield fewer bondline voids than the matrix style of dispense pattern.

Not for product specifications
The technical data contained herein are intended as reference only. Please contact your local quality department for assistance and recommendations on specifications for this product.

STORAGE:
Store product in the unopened container in a dry location. Storage information may be indicated on the product container labeling.

Optimal Storage: -40 °C. Storage below minus (-)40 °C or greater than minus (-)40 °C can adversely affect product properties.

Material removed from containers may be contaminated during use. Do not return product to the original container. Henkel Corporation cannot assume responsibility for product which has been contaminated or stored under conditions other than those previously indicated. If additional information is required, please contact your local Technical Service Center or Customer Service Representative.

Conversions
(°C x 1.8) + 32 = °F
kV/mm x 25.4 = V/mil
mm / 25.4 = inches
N x 0.225 = lb/F
N/mm x 5.71 = lb/in
psi x 145 = N/mm²
MPa = N/mm²
N·m x 8.851 = lb·in
N·m x 0.738 = lb·ft
N·mm x 0.142 = oz·in
mPa·s = cP

Disclaimer

Note:
The information provided in this Technical Data Sheet (TDS) including the recommendations for use and application of the product are based on our knowledge and experience of the product as at the date of this TDS. The product can have a variety of different applications as well as differing application and working conditions in your environment that are beyond our control. Henkel is, therefore, not liable for the suitability of our product for the production processes and conditions in respect of which you use them, as well as the intended applications and results. We strongly recommend that you carry out your own prior trials to confirm such suitability of our product.
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